

THE GENUS *CEPHALOSCYMNUS* CROTCH IN NORTH AMERICA  
(COLEOPTERA: COCCINELLIDAE)

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ABSTRACT—The genus *Cephaloscymnus* is reviewed and a key provided to separate the known North American species. *C. laevis*, *C. insulatus*, and *C. zimmermanni australis* are described as new; *C. z. zimmermanni* Crotch and *C. occidentalis* Horn are also discussed. Male genitalia of all taxa are figured.

Crotch (1873) erected the genus *Cephaloscymnus* for the single species *zimmermanni* Crotch. Horn (1895) added one more species, *occidentalis*. Casey (1899) included the two species in his revision of American Coccinellidae, but the genus has not been treated as a whole since. I have examined specimens of this genus which include two new species and a new subspecies which are described herein.

*Cephaloscymnus* is placed in the tribe Scymnini and has no close relatives in North America; it is closely related to *Prodilis* Mulsant, a Neotropical genus, but *Prodilis* lacks the metasternal pits present in males of *Cephaloscymnus*. Another reason for not uniting the two genera at present is that *Prodilis* is heterogeneous and will probably have to be split into several genera. A few Neotropical species have been described as *Cephaloscymnus* but almost certainly belong to *Prodilis*.

*Cephaloscymnus* may be separated from other North American Scymnini by the elongate, narrow eyes and extremely short antennae. The male genitalia and the shape of the receptaculum seminis must be used to separate members of this genus with certainty. The external characters as used in the key are not dependable unless a series of specimens of each is available.

*Cephaloscymnus* Crotch

*Cephaloscymnus* Crotch, 1873, p. 382. Type-species: *Cephaloscymnus zimmermanni* Crotch, monotypic.

The genus is characterized by the following: large vertical head; eyes narrow, elongate, inner margins nearly parallel; antennae extremely short, 10-segmented, compact club four-segmented, resting in grooves on anterior lobes of frons. Pronotum transverse, narrow, anterior angles extending forward to anterior margin of eyes, lateral margins explanate, more strongly so anteriorly. Metasternum with a large pubescent pit near lateral margin in males. Metacoxal lines complete, semicircular, extending about one-half length of segment.

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KEY TO SPECIES AND SUBSPECIES

1. Length 2.15 mm. or more; eastern U. S., Tex., Ariz., N. Mex., and Mexico ..... 2  
    Length 2.15 or less; California, Ariz., Tex. .... 3
2. Pronotum and elytra piceous to black; eastern U.S. ....  
    ..... *zimmermanni zimmermanni* Crotch  
    Pronotum usually reddish, elytra piceous to brown; southwestern U.S. and  
    northeastern Mexico ..... *zimmermanni australis* n. subsp.
3. Ventral surface black (except legs and mouthparts) ..... *laevis*, n. sp.  
    Ventral surface piceous or brown ..... 4
4. Pronotum finely punctured, anterior angles barely explanate .....  
    ..... *occidentalis* Horn  
    Pronotum coarsely punctured, anterior angles strongly explanate .....  
    ..... *insulatus*, n. sp.

*Cephaloscymnus zimmermanni zimmermanni* Crotch  
 (Figs. 1, 2, 3, 10)

*Cephaloscymnus zimmermanni zimmermanni* Crotch, 1873, p. 382.

*Male and Female.*—Length 2.15 to 2.40 mm., width 1.30 to 1.45 mm. Color piceous to black dorsally; underside piceous, tarsi slightly paler. Punctures on pronotum moderately coarse, separated by one-half their diameter; lateral margins strongly explanate. Elytral punctures coarse, separated by less than their diameter. Male genitalia with parameres straight, shorter than basal lobe; basal lobe with dorsal keel, sides parallel and tip broadly rounded in ventral view (figs. 1, 2); siphon enlarged near apex, narrowing abruptly just before apex (fig. 3). Female receptaculum seminis wide, slightly curved with a small projection at apex (fig. 10).

*Type Locality.*—South Carolina (fide Horn, 1895).

This subspecies is known from D. C., Indiana, Maryland, New Jersey, Virginia and South Carolina. It is apparently widespread but has been rarely collected.

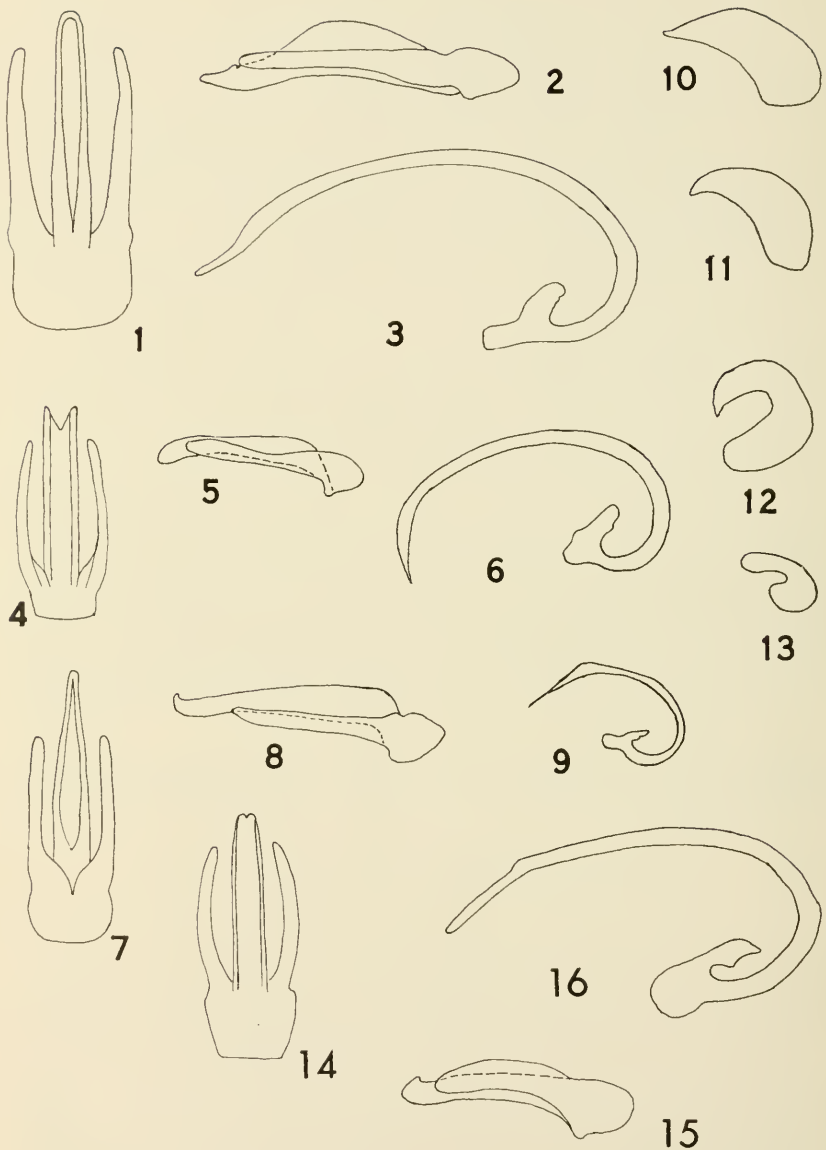
*Cephaloscymnus zimmermanni australis*, n. subsp.  
 (Fig. 11)

*Male.*—Length 2.20 to 2.36 mm., width 1.38 to 1.60 mm. Color piceous to brown dorsally, pronotum red; underside black, legs, mouthparts and epipleura yellowish brown. Punctures on pronotum dense, coarse, separated by less than half their diameter or contiguous; lateral margins strongly explanate. Elytral punctures finer than pronotal punctures, separated by less than half their diameter. Male genitalia identical to those of *zimmermanni* (figs. 1, 2, 3).

Female receptaculum seminis nearly as in *zimmermanni* but lacking the small projection at the tip (fig. 13).

*Holotype.*—Male. Kerrville, Texas, 19-VI-07, F. C. Pratt collector (U. S. Nat. Mus. type no. 70399).

*Paratypes.*—15. MEXICO: Monterrey, E. A. Schwarz collector. UNITED STATES: ARIZONA: Chiricahua Mts., Hubbard and Schwarz collection; Cochise Co., Palmerlee; Huachuca Mts., Millers Canyon. NEW MEXICO: Las Vegas, Barber and Schwarz collection.



Figs. 1-13, *Cephaloscymnus* spp. Figs. 1-3, *zimmermanni zimmermanni* Crotch, ♂: 1, genitalia, ventral; 2, genitalia, lateral; 3, siphus, lateral. Figs. 4-6, *occidentalis* Horn, ♂: 4, genitalia, ventral; 5, genitalia, lateral; 6, siphus, lateral. Figs. 7-9, *insulatus*, n. sp., ♂: 7, genitalia, ventral; 8, genitalia, lateral; 9, siphus, lateral. Figs. 10-13, ♀ receptaculum seminis: 10, *zimmermanni zimmermanni*; 11, *zimmermanni australis*, n. sp.; 12, *occidentalis*; 13, *insulatus*. Figs. 14-16, *laevis*, n. sp., ♂: 14, genitalia, ventral; 15, genitalia, lateral; 16, siphus, lateral.

TEXAS: Mt. Home, 7-VI-07, F. C. Pratt collector. Deposited in U. S. Nat. Mus. collection.

This subspecies differs from the nominate form in having the pronotum red rather than piceous or black and the pronotal punctures larger and denser than the elytral punctures, while the pronotal punctures are smaller than the elytral punctures in *zimmermanni*. The color of the underside is also quite different in the two subspecies. The male genitalia are quite similar in *zimmermanni* and *australis* and the female genitalia nearly so. On this basis it was thought best to consider the forms as geographically separated populations rather than distinct species. No specimens have been seen from the area between Indiana and southern Texas, but it is likely that the two species intergrade somewhere in this area.

***Cephaloscymnus occidentalis* Horn**

(Figs. 4, 5, 6, 12)

*Cephaloscymnus occidentalis* Horn, 1895, p. 111.

*Male and Female*.—Length 1.85 to 2.10 mm., width 1.10 to 1.40 mm. Color brown dorsally, pronotum reddish brown; underside piceous, legs brown. Punctures on pronotum fine, dense, nearly contiguous; lateral margins feebly explanate. Elytral punctures coarse, separated by their diameter or less. Male genitalia with parameres sinuate, shorter than basal lobe; basal lobe with sides parallel, tip emarginate (figs. 4, 5); siphon enlarged near apex, tapering to a sharp point (fig. 6). Female receptaculum seminis sharply curved, tip bent downward (fig. 12).

*Type Locality*.—Southern California.

*Distribution*.—Arizona: Hot Springs; Catalina Springs. California: Costa Mesa; Long Beach; Los Angeles; Pasadena. Texas: Brownsville.

***Cephaloscymnus insulatus*, n. sp.**

(Figs. 7, 8, 9, 13)

*Male*.—Length 2.00 to 2.10 mm., width 1.10 to 1.30 mm. Color brown dorsally, pronotum reddish; underside piceous, legs, mouthparts and epipleura brown. Punctures on pronotum coarse, dense, contiguous; lateral margins strongly explanate. Elytral punctures subequal to pronotal punctures, separated by less than one-half their diameter. Male genitalia with parameres straight, shorter than basal lobe; basal lobe with tip curved upward, sides tapering to a point in ventral view (figs. 7, 8); siphon enlarged at apical third, apex slender, attenuated (fig. 9). Female receptaculum seminis sharply curved, tip broadly rounded, slightly bulbous (fig. 13).

*Holotype*.—Male. Santa Rita Mts., Arizona, Hubbard and Schwarz collection (U. S. Nat. Mus. type no. 70400).

*Paratypes*.—21. Same data as holotype; Oracle, Arizona, Hubbard and Schwarz collection.

This species is most likely to be confused with *occidentalis* because of its small size. The male genitalia and female receptaculum seminis will serve to distinguish them from each other.

**Cephaloseymnus laevis**, n. sp.

(Figs. 14, 15, 16)

Male.—Length 2.00 mm., width 1.15 mm. Color light brown dorsally, black ventrally, mouthparts, legs, and copleurae light brown. Punctures on pronotum coarse, separated by their diameter; lateral margins explanate. Elytral punctures coarser than pronotal punctures, separated by their diameter. Male genitalia with parameres shorter than basal lobe, broad in lateral view; basal lobe with tip curved upward, apex emarginate in ventral view (figs. 14, 15); siphon slightly narrower in apical third (fig. 16).

Holotype.—Male. Nogales, Santa Cruz Co., Arizona, collected by F. W. Nunenmacher; California Academy of Sciences.

The male genitalia place this species near *C. insulatus*, but the black ventral surface and the relatively moderately punctured pronotum distinguish it from any other described *Cephaloseymnus*.

## REFERENCES

- Casey, T. L. 1899. A revision of the American Coccinellidae. Jour. New York Ent. Soc. 7:71-169.  
Crotch, G. R. 1873. Revision of the Coccinellidae of the United States. Trans. Amer. Ent. Soc. 4:363-382.  
Horn, G. H. 1895. Studies in Coccinellidae. Trans. Amer. Ent. Soc. 22:81-114.

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